

A New Species of *Thelypteris* subg. *Goniopteris* from the State of Veracruz, Mexico

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Extensive field work in well known areas, as is the region of Los Tuxtlas, Veracruz, Mexico, still yields some surprises to botanists; the oldest specimen of this new species was collected 20 years ago and remained hidden in storage.

Thelypteris rhachiflexuosa R. Riba, sp. nov. (Fig. 1).—TYPE: México, Veracruz, Munic. San Andrés Tuxtla, along trail from Estación de Biología Tropical Los Tuxtlas to Laguna Escondida, 250–350 m, 2 Feb 1989, R. Riba 1683, B. Pérez-G., A. Flores C., G. Ibarra (UAMIZ; isotypes ENCB, F, GH, MEXU, MO, UC).

Rhizoma repens, ca. 0.5–0.8 cm crassum; folia 40–66 cm longa; petiolus 25–44 cm longus; lamina 18–44 cm longa, 17–28 cm lata; rhachis flexuosa; pinnae alternantes, 2–5 paria, 9–23 cm longae, 1.9–5 cm latae, pari basali aliquot reflexo, segmento terminali conformi, basi inaequilatera; sori biseriata inter duas venas; sporangia setulosa.

Rhizome short creeping, 0.5–0.8 cm thick, rhizome scales dark brown, with furcate trichomes at the margin (Fig. 2); leaf 40–66 cm long, 1-pinnate, with a conform terminal segment 11–22 × 2.4–6 cm; petiole 23–44 × 0.15–0.3 cm, with furcate trichomes at the base and glabrous or glabrescent in the distal third; lamina 18–44 × 17–28 cm; rhachis slightly to evidently flexuous, with 1-furcate trichomes (some stellate) in the adaxial groove; pinnae alternate, 6–12 plus the terminal one, 9–23 × 1.9–5 cm, the basal ones short-stalked, with the base unevenly cuneate, distal pinnae sometimes slightly adnate basiscopically, base unevenly cuneate, with the acroscopic side excised, the margin entire, crenate or very shallowly lobed, long-acuminate; adjacent costules 0.25–0.5 cm apart, veins meniscioid, with 7–13 pairs of secondary veins, the lower 4–8 pairs united with a free excurrent veinlet and the next few pairs united in a common veinlet running to the margin or the sinus; costae, veins, and laminar tissue glabrous adaxially and abaxially or with minute simple trichomes along the costae; laminar tissue papyraceous to subchartaceous; sori in double rows between costules, exindusiate; sporangia with simple setae 0.1 mm or less (Fig. 3); spores 64 per sporangium.

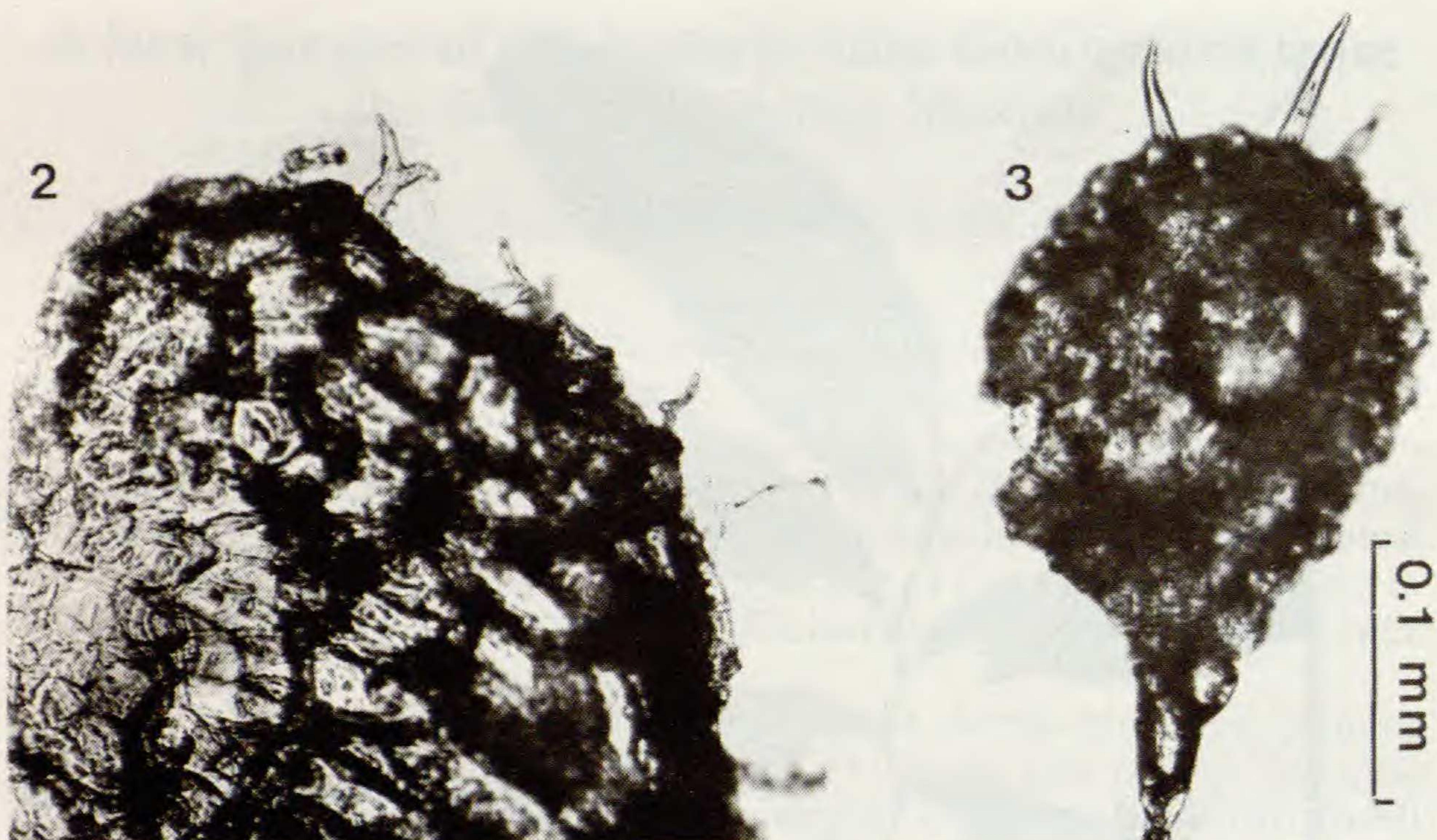
Paratypes: Mexico. Veracruz: Munic. San Andrés Tuxtla, Estación de Biología Tropical Los Tuxtlas, Calzada 00337 (MEXU, UAMIZ), Ibarra 1015 (MEXU), 3300 (MEXU, UAMIZ), Lorence 3277 (MEXU), Palacios-Ríos 1 (UAMIZ), Riba 441 (UAMIZ); Península de Moreno, 18 km NNE Catemaco Lake, Riba 1695 (UAMIZ); near Zapoapan, SE of Catemaco, Dressler & Jones 98 (MEXU).

The new species has been collected at the Estación de Biología Tropical Los Tuxtlas and vicinity, in primary and secondary vegetation of tropical evergreen forest (selva alta perennifolia). Three additional species of *Thelypteris* subg. *Goniopteris* with meniscioid veins grow in Mexico (Smith, 1973): *T. poiteana*, *T. ghiesbreghtii*, and *T. meniscioides*. *Thelypteris rhachiflexuosa* shares with *T. poiteana* the setulose sporangia, but the new species has glabrous costae, veins,



FIG. 1. Holotype of *Thelypteris rhachiflexuosa*.

and laminar tissue; it differs from all of them by the flexuous rhachis. *Thelypteris oroniensis*, from Costa Rica, is the only other *Goniopteris* in Central America with a fractiflex rhachis, but the secondary veins are not meniscioid.



FIGS. 2-3. *Thelypteris rhachiflexuosa*. FIG. 2. Rhizome scale with forked trichomes. FIG. 3. Sporangium with simple setae.

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LITERATURE CITED

- SMITH, A. R. 1973. The Mexican species of *Thelypteris* subgenera *Amauropelta* and *Goniopteris*. Amer. Fern J. 63:116-127.